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10/577,315	04/28/2006	Wolfgang Fick	2003P15434WOUS	5156

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SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER

BHARADWAJ, KALPANA

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2129

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,315	Applicant(s) FICK ET AL.	
	Examiner KALPANA BHARADWAJ	Art Unit 2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/15/2008 & 12/23/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to an Appeal Brief entered 12/20/2008 for the patent application 10/577,315 filed on 04/28/2006. The previous Final Office action mailed on 07/22/2008 has been WITHDRAWN.
2. All prior office actions are fully incorporated into this Office Action by reference.
3. Upon further consideration and search, based on the applicant's arguments in the appeal brief, the Examiner found inconsistencies in the claimed subject matter.

Status of Claims

4. Claims 5-12 are pending. Claims 1-4 have been cancelled.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Independent claims 5 and 10 read :

determining an operating or functional mode of the technical system from the temporal behavior the operating parameters using artificial intelligence methods selected from the group consisting of:

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neuronal network, fuzzy logic, combined neuro/fuzzy method, and genetic algorithm, wherein the determining of the operating or functional mode of the technical system from the temporal behavior of the operating parameters is performed with no model of the technical system.

The applicant has claimed and argued specifically that the invention uses neural networks, wherein the operating or functional mode is determined with no model of the technical system. This is a statement which is a contradiction in itself, because a neural network is a “**data modeling tool** that is able to capture and represent complex input/output relationships.” Therefore, if neural networks are used, then an underlying model has been used. If there is “no model” of the underlying technical system, then there will be no use of any of the machine learning methods that have been claimed, i.e. neuronal network, fuzzy logic, combined neuro.fuzzy method etc. The applicant needs to clarify this issue and point out how the disclosure supports the definition of the claimed limitation(s) “*is performed with no model of the technical system*”.

Claims 6-9 and 11-12 are rejected because they are based on a rejected claim.

Appropriate correction is required.

Support for the Examiner’s stated definition of ‘neural networks’ is provided through the citation of an appropriate reference (Neural Network Models, spring 2002).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 5-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Solomon (USPN 2004/0162638, referred to as **Solomon**).

Claim 5:

Solomon teaches a method for the operation of a technical system, comprising:
recording a plurality of operating parameters of a system during a time interval
(**Solomon**, ¶ 0038: collective data acquisition); and

determining an operating or functional mode of the technical system from the temporal behavior (**Solomon**, ¶ 0037: behavior-based reactive MRS architecture) the operating parameters using artificial intelligence methods selected from the group consisting of (**Solomon**, ¶ 0025: artificial intelligence):

neuronal network (**Solomon**, ¶ 0025: artificial neural networks), fuzzy logic (**Solomon**, ¶ 0047: using fuzzy logic), combined neuro/fuzzy method (**Solomon**, ¶ 0025: artificial intelligence; robotic agents; ¶ 0047: using fuzzy logic), and genetic algorithm (**Solomon**, ¶ 0027: genetic algorithms), wherein the determining of the

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operating or functional mode of the technical system from the temporal behavior of the operating parameters is performed with no model of the technical system (**EN:** a 'technical system' is a model in itself).

Claim 6:

Solomon teaches the method according to claim 5, wherein an operating and a functional mode of the technical system are determined from the temporal behavior the operating parameters (**Solomon**, ¶ 0197: temporal objects) using artificial intelligence methods selected from the group consisting of:

neuronal network, fuzzy logic, combined neuro/fuzzy method, and genetic algorithm (**EN:** see claim 1 for rejection).

Claim 7:

Solomon teaches the method according to claim 5, wherein the operating parameters are recorded as data sets during a plurality of temporally separate time intervals (**Solomon**, ¶ 0031: Reprogrammable ... uploaded at any time) and the data sets are compared using the artificial intelligence methods, and an adjustment of the operating parameters (**Solomon**, ¶ 0031: mission objective alteration; **EN:** 'alteration' would involve adjustment to the operating parameters) is determined in order to achieve a desired operating mode of the technical system.

Claim 8:

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Solomon teaches the method according to claim 7, wherein a probability that an adjustment of the operating parameters provides for the desired operating mode is determined (**Solomon**, ¶ 0041: probabilities of winning; ¶ 0047: assess probabilities and thresholds).

Claim 9:

Solomon teaches the method according to claim 8, wherein the operating mode of the technical system is determined using a correlation analysis of the operating parameters, wherein the result of changes in operating parameters that correspond to input parameters is determined based on operating parameters which correspond to output parameters (**Solomon**, ¶ 0029: collective learning and decision making; **EN**: 'learning' is to do a correlation analysis and find the correspondence between output and input parameters to achieve a certain result).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Solomon** as applied to claim 5-9 above, and further in view of Ma (USPN 2002/0136260, referred to as **Ma**).

Claim 10:

Solomon teaches (refer to claim 1 for rejections):

recording operating parameters of at least part of a system during a time interval;

determining an operating mode or functional mode of the technical system from the temporal behavior the operating parameters using artificial intelligence methods selected from the group consisting of:

neuronal network, fuzzy logic, combined neuro/fuzzy method, and genetic algorithm, wherein the determining of the operating of functional mode of the technical system from the temporal behavior the operating parameters is performed with no model of the technical system;

Solomon does not teach the method of controlling the operation of a power station, comprising:

assigning a fingerprint to the operating parameter by the artificial intelligence method;

comparing the fingerprint to a predetermined fingerprint; and adjusting the operating parameters of the power station in order to achieve a desired operation of the power station.

However, Ma teaches teach the method of controlling the operation of a power station, comprising (**Ma**, ¶ 0006: power stations):

assigning a fingerprint to the operating parameter by the artificial intelligence method (**Ma**, ¶ 0051: characteristic signatures; variation patterns; **EN**: 'signatures' using patterns, is to fingerprint by the AI method);

comparing the fingerprint to a predetermined fingerprint (**Ma**, ¶ 0051: compared against stored values); and adjusting the operating parameters of the power station in order to achieve a desired operation of the power station (**Ma**, ¶ 0051: regulates ... in a mode that is appropriate; **EN**: 'regulating' is to adjust).

Solomon and Ma are from the same field of endeavor, controlling parameters. It would have been obvious to one of ordinary skill in the art to have modified Solomon's grouping of mobile agents with predetermined signatures, for the benefit of a controller being able to predict the onset of several conditions (**Ma**, ¶ 0051).

Claim 11:

Solomon modified by Ma teaches the method according to claim 10, wherein a probability that an adjustment of the operating parameters provides for the desired operating mode is determined (**Solomon**, ¶ 0041: probabilities of winning; ¶ 0047: assess probabilities and thresholds).

Claim 12:

Solomon modified by Ma teaches the method according to claim 11, wherein the operating mode of the power station is determined using a correlation analysis of the operating parameters, wherein the result of changes in operating parameters that

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correspond to input parameters is determined based on operating parameters which correspond to output parameters (**Solomon**, ¶ 0029: collective learning and decision making; **EN**: 'learning' is to do a correlation analysis and find the correspondence between output and input parameters to achieve a certain result).

Response to Argument

11. Applicant's arguments filed 11/20/2008 have been fully considered but they are not persuasive.

Examiner's response:

Applicant's sole argument focus has been the use of 'no model of the technical system.'

The arguments are moot in view of the new grounds of rejection supported by examiner's citation.

Examination Considerations

12. Examiner has cited particular columns and line numbers or paragraph numbers in the references applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the Applicant in preparing

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responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. The entire reference is considered to provide disclosure relating to the claimed invention.

Conclusion

13. Claims 5-12 stand rejected.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence Information

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to KALPANA BHARADWAJ whose telephone number is (571)270-1641. The examiner can normally be reached on Monday-Friday 7:30am 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bharadwaj Kalpana/
Examiner, Art Unit 2129

/David R Vincent/

Supervisory Patent Examiner, Art Unit 2129